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TITLE : MAGNETIC LIQUID SEAL DEVICE

ABSTRACT : PURPOSE: To seal rationally and to improve the permissible pressure of max. axis seal, by means of giving the pressure difference of  $p/n$  of the axis seal at the space separated by each ring micro-projections, where the number of the ring microprojection is specified as  $n$ .

CONSTITUTION: Magnetic liquid 14 is concentrated on the top of ring micro-projections 12a by a bar magnet 15, by means of interposing the magnetic liquid 14 at the inner circumferent surface facing to the ring micro-projection 12a which were arranged on the outer circumference of a rotation axis 12 of a magnetic body of a solid ring pole block 13. Gases of pressures of  $3p/4$ ,  $sp/4$ , and  $p/4$  are respectively so distributed as to give an allotted pressure difference  $p/4$  from a partial pressure chamber 16 to A chamber, B chamber and C chamber between the adjacent ring micro-projection 12a, where the number of the projections is specified as 4, and the axis seal against atmosphere is specified as  $p$ . Accordingly, the pressure differences corresponding to each ring micro-projection 12a of magnetic liquid 14 become to  $p/4$  respectively, and magnetic liquid 14 of all ring micro-projection 12a takes charge of a portion of axis seal, and can increase the max. axis seal pressure.

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